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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/626,352 | 07/23/2003 | Gregory S. Herman | 200301159-1 | 9138 |

22879 7590 01/04/2007

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| EXAMINER |
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MARTIN, ANGELA J

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| ART UNIT | PAPER NUMBER |
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1745

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 01/04/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/626,352

Applicant(s)

HERMAN ET AL.

Examiner

Angela J. Martin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address.--

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 51-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 51-54, 57, 58 is/are rejected.
- 7) ☒ Claim(s) 55,56 and 59-61 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is responsive to the Amendment filed on October 6, 2006. The Applicant has amended claims 1 and 2; canceled non-elected claims 19-50; added new claims 51-61. However, the rejection is made final for the following reasons of record.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-18, 51-54, 57, 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy et al., U.S. Pat. No. 6,059,943.

Murphy et al., teach a method of forming a fuel cell component (col. 1, lines 10-14), comprising depositing a hydroxide form of the component (col. 5, lines 12-17), and hydrothermally dehydrating the hydroxide (col. 12, lines 52-59). It teaches firing the component to an operating temperature of a fuel cell to fix a disposition of component (col. 13, lines 1-6). It teaches the fuel cell component comprises an anode (col. 14, lines 3-4); comprises an electrolyte (col. 11, lines 20-23); comprises a cathode (col. 14, lines 3-6). It teaches anode, electrolyte, and cathode coupled together (col. 13, lines 64-67 and col. 14, lines 1-6). It teaches hydrothermally dehydrating component on anode, electrolyte, and

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cathode (col. 12, lines 52-60). It teaches hydroxide deposited on a low temperature support structure (col. 5, lines 23-30). It teaches hydrothermally dehydrating hydroxide comprises heating hydroxide, providing background pressure of water (Fig. 3). It teaches introducing a pH control into the process (col. 12, lines 42-6). It teaches the method of claim I, further comprising depositing said hydroxide or oxyhydroxide on a substrate comprising a fuel manifold and then performing said hydrothermally dehydrating of said hydroxide or oxyhydroxide (col. 12, lines 52-67). The method of claim 51, further comprising filling trenches of said manifold with a sacrificial material during formation of said component on said substrate (col. 11, lines 63-67). The method of claim 52, further comprising removing said sacrificial material from said trenches following formation of said component on said substrate (col. 12, lines 1-18). A method for forming a fuel cell component comprising: depositing a hydroxide or an oxyhydroxide in a form of said component; and hydrothermally dehydrating said hydroxide or oxyhydroxide form of said component (col. 12, lines 1-67). The method of claim 57, further comprising: filling trenches of said manifold with a sacrificial material during formation of said component on said substrate (col. 11, lines 63-67); and removing said sacrificial material from said trenches following formation of said component on said substrate (col. 12, lines 1-18).

Thus, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because although the prior art of record does not recite "wherein said hydrothermally dehydrating said

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hydroxide or oxyhydroxide form of said fuel cell component both dissolves and recrystallizes said hydroxide or oxyhydroxide form of said fuel cell component” this would be the end result of heating and providing a high background pressure of water.

3. Claims 1, 3, 10, 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy et al., U.S. Pat. No. 6,059,943, in view of Herman et al., U.S. Pat. Pub. 2005/0026019.

Murphy et al., teach a method as described above.

Herman et al., teach depositing a material on a substrate by screen-printing process, tape casting process, doctor blade process, spin-on process, colloidal spray deposition process (0018).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to insert the teachings of Herman et al, into the teachings of Murphy et al., because Herman et al., teaches that a method of applying a material onto a substrate “in order to achieve the desired property.”

Allowable Subject Matter

4. Claims 55, 56, 59-61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Applicant claims “the method of claim 54, wherein said

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component is a fuel cell anode. The method of claim 54, wherein said component is a fuel cell cathode." The prior art of record teaches that the component is electrolyte membrane.

Response to Arguments

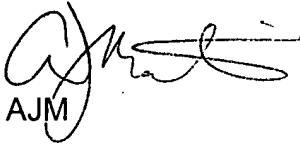
5. Applicant's arguments filed 10/6/06 have been fully considered but they are not persuasive. Applicant argues, "Murphy does not teach or suggest anything relative to the formation of other fuel cell components, such as an anode or cathode." However, the independent claims disclose "a fuel cell component" which encompasses the electrolyte membrane of Murphy. Applicant argues that Murphy does not teach hydrothermal treatment. However, in column 12, lines 52-67, Murphy disclose a hydrothermal treatment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


AJM

DAH-WEIYUAN
PRIMARY EXAMINER